

WIRELESS UPDATE: Moving at the speed of

Supply chain professionals are certainly moving toward mobile applications to improve overall operations, but just how fast is it happening?

BY BRIDGET MCCREA, CONTRIBUTING EDITOR

With tablet computers and handheld devices maintaining their tight grip on the business world, it just makes sense that the supply chain sector would continue its forward momentum toward a time when wires are a thing of the past.

Long talked about in supply chain circles, goals like real time and visibility are already coming to fruition for tech-savvy professionals who integrate wireless, RFID and other mobile technologies into their operations.

Over the next few pages we'll take a look at just how much

traction mobile technologies have gained in today's supply chain, discuss the benefits of RFID and wireless integrations, and highlight what barriers to adoption still remain.

Harnessing the speed of light

When Simon Ellis, practice director for analyst firm IDC Manufacturing Insights, talks to supply chain professionals about real-time visibility made possible by wireless technology these days, he hears a lot of grumbling about how the rapid advancements make it difficult to make good purchase decisions.



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“One supply chain executive told me that by the time he goes through the six-month purchase approval process at his firm for wireless technology, three generations of smart phones have come and gone,” says Ellis.

Credit “speed-of-light” technology advancements with creating those and other frustrations as professionals strive to implement the latest wireless and

RFID technologies without breaking the bank, or falling behind. “The clock speed of innovation for mobility tools,” says Ellis, “tends to be much more rapid than that of the supply chain itself.”

Coming up with a business case for those speed-of-light technology options isn’t always clear cut either, says Ellis. After all, it’s hard to put a price tag on advantages like “better access to information” and “reductions in errors.” Translating those benefits into tangible business results “can be extremely tricky,” says Ellis.

Despite the roadblocks, professionals are pushing into the wireless world on a steady basis. In its June 2011 report entitled “Incorporating Mobility into Sales and Marketing in the Consumer Packaged Goods Industry,” for example, IDC analyzed the potential opportunities for mobility once integrated into the sales and marketing function of the CPG industry.

IDC reports that mobile applications and devices are penetrating the sales and marketing organization at a “staggering pace,” and expects total worldwide smartphone shipments to reach 925.7 million units by 2015 (compared to 450 million in 2011). Computer tablets like the iPad, Motorola XOOM and Samsung Galaxy Tab are also growing in popularity, and are on pace to reach shipments of roughly 50 million units in 2011 (up 18 million units from 2010).

Expect to see at least a portion of those mobile devices in the warehouse, where more professionals are gravitating toward wireless environments. In those environments, Tim Zimmerman, research director of network infrastructure, mobility and RFID at Gartner says requirements for specific key sizes—and the ability to withstand multiple, 6-foot drops to a concrete floor—have given way to durable devices that share the operating systems, processors, communications, batteries, and even peripheralization with their more ruggedized brethren.

“While there will continue to be a market for ruggedized applications,” says Zimmerman, “many day-to-day

logistics tasks will be able to utilize durable solutions for their data collection requirements.”

Credit advancements in wireless communication infrastructures with helping to boost those numbers. According to Zimmerman, the ratification of 802.11n combined with advancements in RFID capabilities, have made the wireless world more inviting. On the wireless local access network (LAN) side, for example, Zimmerman says the technology itself has stabilized over the last couple of years, opening the door for more data collection opportunities.

Not everyone is reaping the rewards of these wireless advancements, although many are looking to upgrade and begin seeing those benefits. “A lot of [professionals] in the warehouse and distribution sector still have a lot of the old technology installed,” Zimmerman says, “and are looking to integrate the value and cost advantages of an 802.11n solution.”

That movement is also being driven by the fact that wireless handset providers like Motorola are rolling out 802.11n-capable devices. “That’s sending a signal to the industry that now is the time to upgrade wireless infrastructures to support those handhelds,” says Zimmerman, “and tap into the value that they provide.”

Part of the growth in wireless will come from the handheld market, where durable devices are gaining popularity among managers who increasingly want to handle their operations without the hassle of wires. “The cost profiles and functionality of handheld devices is making their adoption more advantageous for companies,” says Zimmerman, who points out that improved Wi-Fi networks and hot spots and better cellular capabilities are all playing a role in the evolution.

Looking ahead, Zimmerman sees wireless adoption growing by about 30% annually among businesses, and says that number will continue to be driven by the new spectrum of network services. “Eight out of the nine firms we track in the enterprise LAN space are buying wireless companies, and the

rest have strategic alliances with leading manufacturers,” Zimmerman says. “Everyone is getting their foot in the door.”

Finally, Zimmerman expects an uptick for wireless in the next 24 to 36 months as enterprises convert their 802.11g wireless infrastructure to 802.11n. “This move will not be driven by the need for additional capacity,” says Zimmerman, “but by other factors that include the end of life of the older, 802.11g equipment; announcements from data collection mobile client suppliers regarding the launch of new 802.11n devices; and the introduction of new durable devices and applications being added the networks.”

RFID comes of age

When Drew Nathanson, director of research operations for VDC Research, tracks the use of RFID in the supply chain, he sees explosive growth in the retail sector, and respectable adoption rates among other users.

“We’ve seen RFID use more than double in some markets, with tag volumes reaching well into the billion-plus units right now,” says Nathanson. “It’s going really strong, with Wal-Mart as one of the biggest consumers.” The large retailer is right now equipping its stores with RFID technology that tracks men’s apparel and jeans, for example, and will soon expand that coverage into its wom-

en’s apparel and other products. “Each time Wal-Mart adds a new SKU to its RFID program,” says Nathanson, “you wind up with millions more tags being used annually.”

One of RFID’s biggest barriers to adoption—high tag costs—continues to hold companies back from investing in the technology, although Nathanson says prices for active tags are trending downward. “Depending on the functionality, active tags run \$10 to \$50 each,” he says. “Passive solutions—such as those used in retail—are running 10 cents to 12 cents a tag.” Even with the high costs of the tags themselves, Nathanson says the value of the RFID solution now more than compensates for the cost. “It’s not really the price of the tag, but the price to tag and the value that you get out of it,” he adds.

Ellis concurs, and says that the benefits that operations glean from RFID implementations have been largely publicized and typically revolve around inventory visibility. “It’s about knowing where things are at all points in time,” says Ellis, “and the ability to communicate more clearly to customers about where items are and when they’re going to be delivered.”

Expect more companies to explore their RFID and wireless options in the future and more suppliers to come up with innovative ways for those managers to make visibility gains and other

efficiencies, especially inside the four walls. “Right now we’re seeing a lot of convergence with other solutions—from bar coding to voice recognition,” says Nathanson, who sees a time when hands-free, eyes-free technology is integrated into warehouse RFID systems. “That will be a perfect fit because it won’t require scanning technology, wires or hands.”

Other up-and-coming wireless apps for the warehouse and DC include those that can sense and monitor product, particularly food, produce and high-value items. “Most recently,” says Nathanson, “we’ve seen the introduction of passive sensors that use film to detect the build-up of gases produced by rotting fruit. That’s a useful wireless application for any company shipping perishable items.”

Expect to see RFID and wireless playing a significant role in the supply chain as the technology behind those solutions improve—and as more companies seek out IT-based solutions to help them work more efficiently. With technology evolving at the speed of light, it will ultimately be up to supply chain managers to figure out which applications will provide the most value—and which can be overlooked in favor of future options. □

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